

**Abstract**

A tire parameter sensing system (12) for a vehicle (10) having a plurality of tires (16, 18, 20, 22) comprises a plurality of tire-based units (34, 36, 38, 40). Each tire-based unit (34, 36, 38, 40) being configured to receive initiation signals and, in response thereto, to transmit response signals (54, 56, 58, 60). A vehicle-based unit (42) receives the response signals (54, 56, 58, 60) and transmits the initiation signals (90). A plurality of signal masking devices (44, 46, 48, 50) is coupled to the vehicle-based unit (42). The signal masking devices (44, 46, 48, 50) have associated tire locations on the vehicle (10) and are actuatable for masking the initiation signals (90) near the associated tire locations. The vehicle-based unit (42) controls the signal masking devices (44, 46, 48, 50) so as to control the tire location from which a tire-based unit responds to the initiation signals (90).